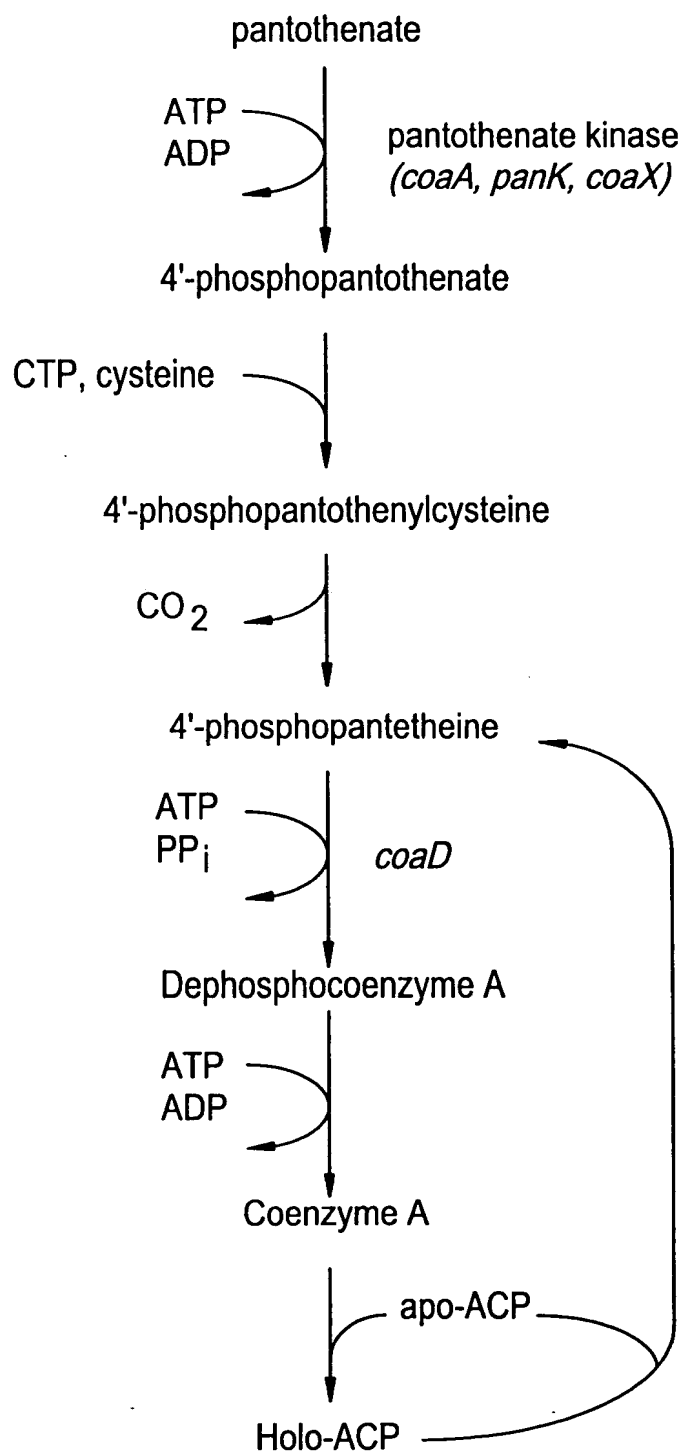


FIG. 1

#5



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FIG. 2

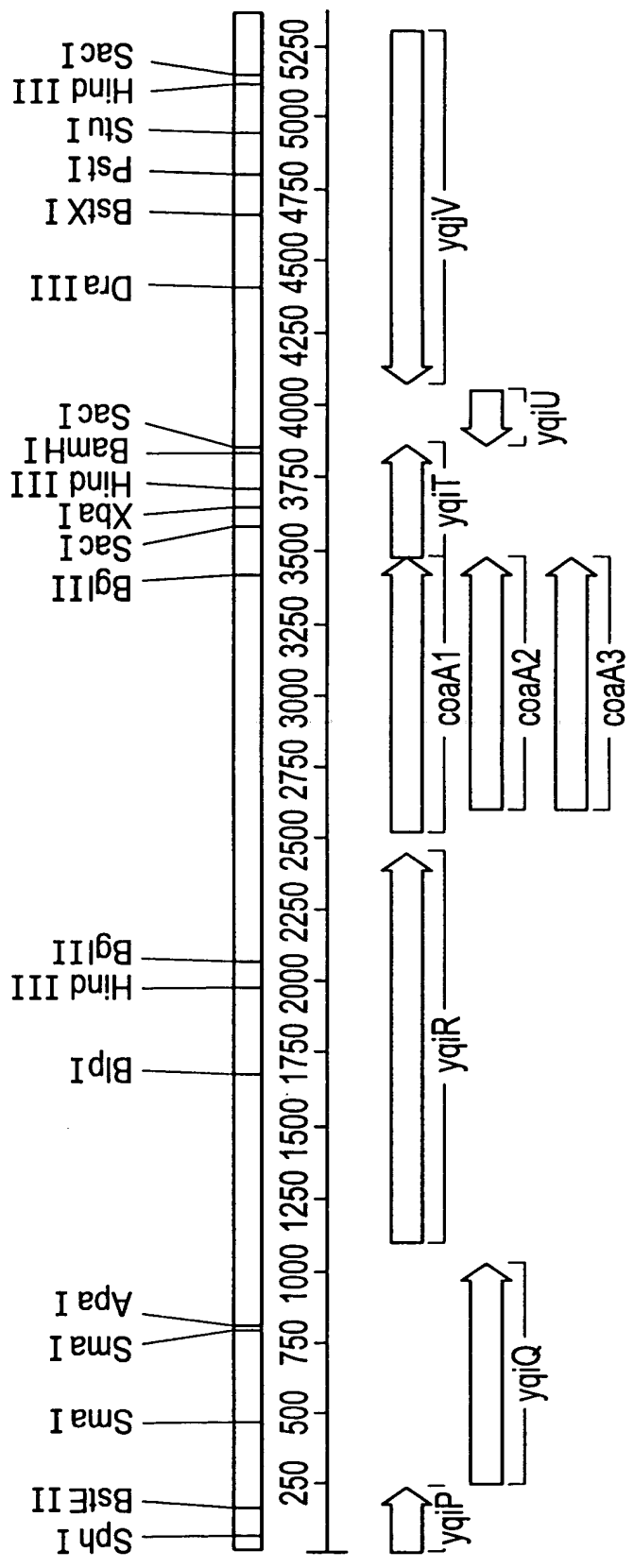
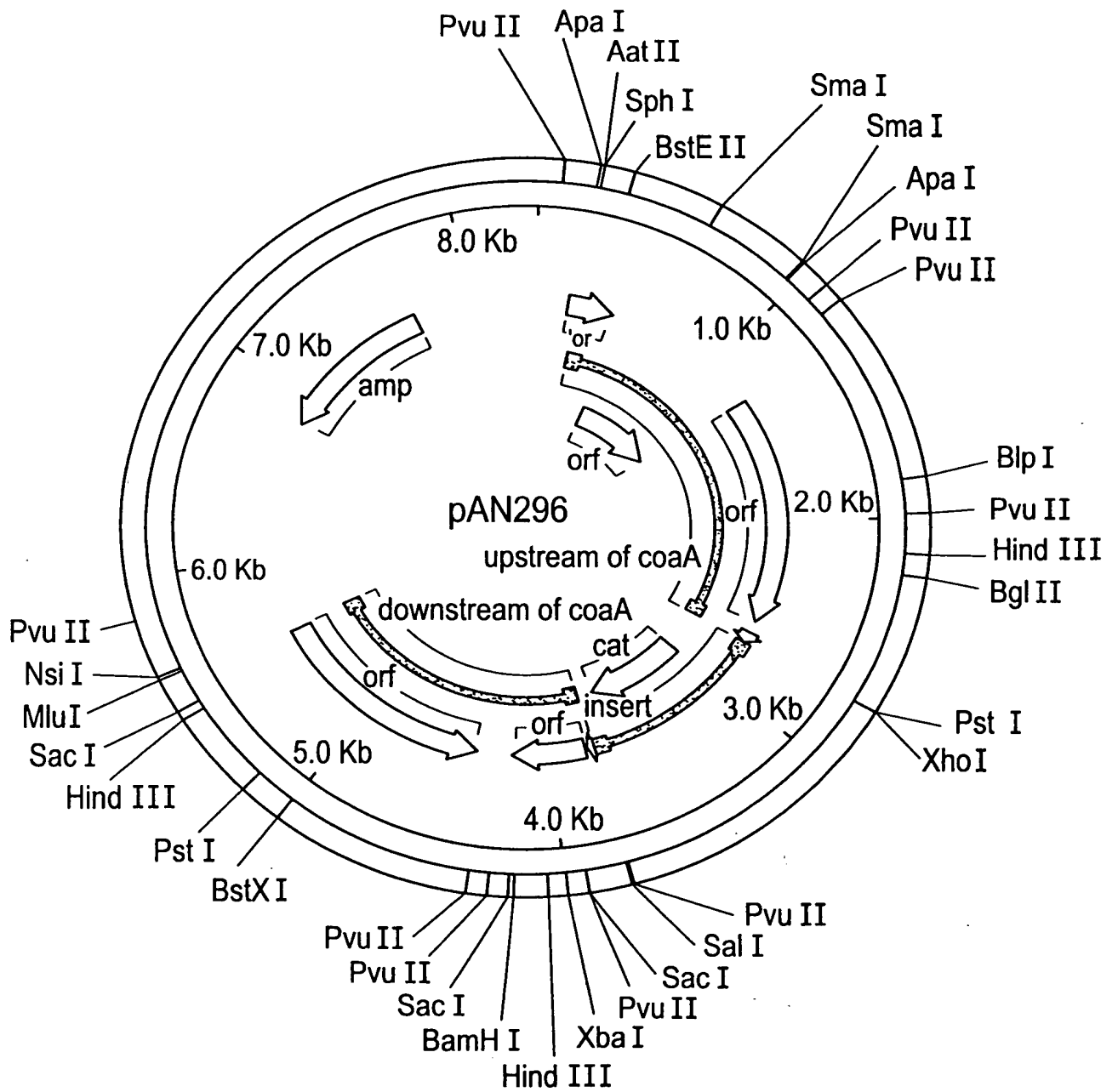




FIG. 3



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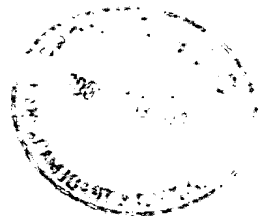
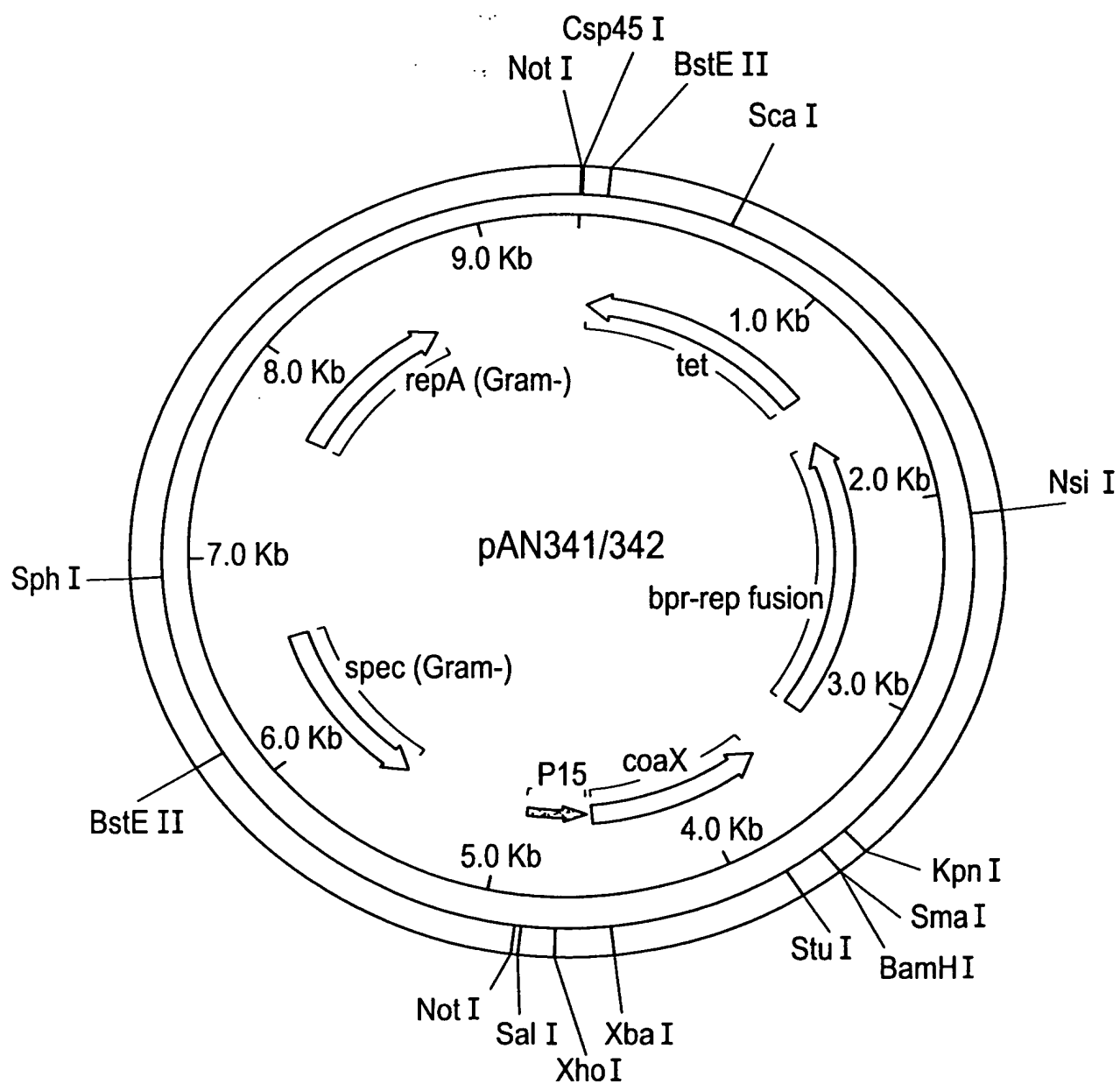


FIG. 5



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## FIG. 6A

## CLUSTAL W (1.7) Multiple Sequence Alignments

Sequence type explicitly set to Protein

Sequence format is Pearson

Seq. 1: B.subtilis Coax SEQNO_9	258 aa	Seq. 8: sp O51477 B.burgdorferi	262 aa
Seq. 2: dbj BAA21476.1 D.vulgaris	212 aa	Seq. 9: sp P74045 Synechocystis	257 aa
Seq. 3: gb AAD35964.1 T.maritima	246 aa	Seq. 10: sp O25533 H.pylori	223 aa
Seq. 4: pir T36391 S.coelicolor	265 aa	Seq. 11: sp O67753 A.aeolicus	229 aa
Seq. 5: sp Q45338 B.pertussis	267 aa	Seq. 12: sp Q9RX54 D.radiodurans	262 aa
Seq. 6: sp O06282 M.tuberculosis	272 aa	Seq. 13: WIT RCA03301 C.acetobutylicum	250 aa
Seq. 7: sp O83446 T.pallidum	273 aa	Seq. 14: WIT RRC02473 R.capsulatus	258 aa

B.subtilis Coax SEQIDNO_9	-----MLLVIDVGNTNTVLGVYHDG-----KLEYHWRIE
WIT RCA03301 C.acetobutylicum	NKRAAFMLLFLRSVLKVILVLDVGNTNIVLGIYNDT-----KLTAEWRLS
pir T36391 S.coelicolor	-----MLLTIDVGNTHTVLGLFDGE-----DIVEHWRLS
sp O06282 M.tuberculosis	-----MLLAIDVRNTHTVVGLLSGMKEHAKVVQWRIR
WIT RRC02473 R.capsulatus	-----MLLCIDCGNTNTVFSVWDGT-----DFAATWRIA
dbj BAA21476.1 D.vulgaris	-----MTQHFLLFDIGNTNVKIGIAVET-----AVLTSYVLP
sp Q9RX54 D.radiodurans	-----MPAFPLLAVDIGNTTTVLGLADASG-----ALHTHTWRIR
gb AAD35964.1 T.maritima	-----MYLLVDVGNTSHSVESITEDG-----KTFRRWRRLS
sp O83446 T.pallidum	-----MLLIDVGNSSHVVFQIGENGRCVRELFRLA
sp O51477 B.burgdorferi	-----MNKPLLSELIIDIGNTSIAFALFKDN-----QVNLFIKMK
sp O67753 A.aeolicus	-----MRFLTVDVGNSSVDIALWEGK-----KVK
sp P74045 Synechocystis	-----METSKPGCGLALDNDKQKPNLGLMIGN-----SRLHWAYC
sp O25533 H.pylori	-----MPARQSFTDLKN---LVLCDIGN-----TR
sp Q45338 B.pertussis	-----MIILIDSGNSRLKVGWFDPDAP--QAAREPAPV

\* :

## FIG. 6B

B. subtilis|Coax|SEQIDNO\_9  
 WIT|RCA03301|C.acetobutylicum  
 pir|T36391|S.coelicolor  
 sp|O06282|M.tuberculosis  
 WIT|RR02473|R.capsulatus  
 dbj|BAA21476.1|D.vulgaris  
 sp|Q9RX54|D.radiodurans  
 gb|AAD35964.1|T.maritima  
 sp|O83446|T.pallidum  
 sp|O51477|B.burgdorferi  
 sp|O67753|A.aeolicus  
 sp|P74045|Synechocystis  
 sp|O25533|H.pylori  
 sp|Q45338|B.pertussis

B. subtilis|Coax|SEQIDNO\_9  
 WIT|RCA03301|C.acetobutylicum  
 pir|T36391|S.coelicolor  
 sp|O06282|M.tuberculosis  
 WIT|RR02473|R.capsulatus  
 dbj|BAA21476.1|D.vulgaris  
 sp|Q9RX54|D.radiodurans  
 gb|AAD35964.1|T.maritima  
 sp|O83446|T.pallidum  
 sp|O51477|B.burgdorferi  
 sp|O67753|A.aeolicus  
 sp|P74045|Synechocystis  
 sp|O25533|H.pylori  
 sp|Q45338|B.pertussis

TSRHKTEDEFGMILRSLFDHS-----GLMFEQIDGIISSVVPPIMFALER  
 TDVLSADEYGIQVMNLFQOD-----KLDPTLVEGVIISSVVPNIMYSLEH  
 TDSRRTADELAVLLQGLMGHPLLGDDELGDGIDGIAICATVPSVLHELRE  
 TESEVTADELALTIDGLIG-----EDSERLTGTAALSTVPSVLHEVRI  
 TDHRRTADEYFVWLTMLQK-----GLQGRISEAIISSAPRVVFNLRV  
 TDPGQTDSIGLRLLLEVLRHAG-----LGPADVGCVASSVVPVGNPLIRR  
 TNREMLPDDLALQLHGLFTIA-----GAP-IPRAAVLSSVAPPVGENYAL  
 TGVFQTEDELFSHLHPLLG-----DAMREIKGIGVASVVPVLTQNTVIER  
 PDARKTQDEYSLLIHALCERAG-----VGRASLRDAFISSVVPVLTQNTIAD  
 TNIMLRDEVYSFFEENFDN-----VN---K-VFISSVVPILNETFKN  
 DFLKLSHEEFLKEEFPKPK-----ALGISVKQSFSEKVRG  
 SGNAPLQTVWTDYNPKSAQLP-----VLLGKVPMLLASVVPE  
 IHFAQNYQLFSSAKEDLKR-----LGIQKEIFYISVNEE  
 AFDNLDLDALGRWLATLPRP-----Q-----RALGVNVAGLARGEAIA

MCTKYFHIEPQIVG-PG-MKTGLNIKYDNPKEVGADRIVNAAAIHLYG-  
 MIRKYFKINPLVVG-PG-IKTGINIKYDNPKEVGADRIVNAAAEIYK-  
 VTRRYGDPVAVLVEPG-VKTGVPILTDHPKEVGADRIINAAVAVELYG-  
 MLDQYWPSPVPHVLIIEPG-VRTGIPLLVDNPNKEVGADRIVNCCLAAAYDRFR-  
 LCNRYFDCRPYVVGKPG-CELPVAPRVDPGTTVGPDRLVNTVAGYDRHG-  
 ACERYL--YRKLIFAPGDIAIPLDNRYERPAEVEVGADRLVAAAYARRLYP-  
 ALKRHFMDAFAVSAEN--LPDVTVELDTPGSGADRLCNLFGAEKYLG-  
 FSQKYFHSPIWVAKN--GCVKWNKNPSEVGADRVANVAVFVKEYG-  
 AVAQISGVQPVVFGPWAYEHLPVRIPEPVRAEIGTDLVANAAAYVHFR-  
 VIFSEFKIKPLFIGFDLNYDLTFNPKYKSKDKFLGSDVFANLVAAIENYS-  
 KIPKIK-----FLKKEN---FPIQVDYKTPETLGTDRVALAYSAKKFY-  
 QTEVWRVYQPKILTAKN---LPLVNLYP---SFGIDRALAGLGTGLTYG-  
 NEKALLNCYPNAKNIAG--FFHLETDYVG---LGIDRQMACLA---VN--  
 ATRAGGCDIRWLRAQP-LAMGLRNGYRNPDLQGLADRWACMVGLARQPS



FIG. 6C

B. subtilis|Coax|SEQIDNO\_9  
WIT|RCA03301|C.acetobutylicum  
pir|T36391|S.coelicolor  
sp|O06282|M.tuberculosis  
WIT|RRC02473|R.capsulatus  
dbj|BAA21476.1|D.vulgaris  
sp|Q9RX54|D.radiodurans  
gb|AAD35964.1|T.maritima  
sp|O83446|T.pallidum  
sp|O51477|B.burgdorferi  
sp|O67753|A.aeolicus  
sp|P74045|Synechocystis  
sp|O25533|H.pylori  
sp|Q45338|B.pertussis

B. subtilis|Coax|SEQIDNO\_9  
WIT|RCA03301|C.acetobutylicum  
pir|T36391|S.coelicolor  
sp|O06282|M.tuberculosis  
WIT|RRC02473|R.capsulatus  
dbj|BAA21476.1|D.vulgaris  
sp|Q9RX54|D.radiodurans  
gb|AAD35964.1|T.maritima  
sp|O83446|T.pallidum  
sp|O51477|B.burgdorferi  
sp|O67753|A.aeolicus  
sp|P74045|Synechocystis  
sp|O25533|H.pylori  
sp|Q45338|B.pertussis





# FIG. 6D

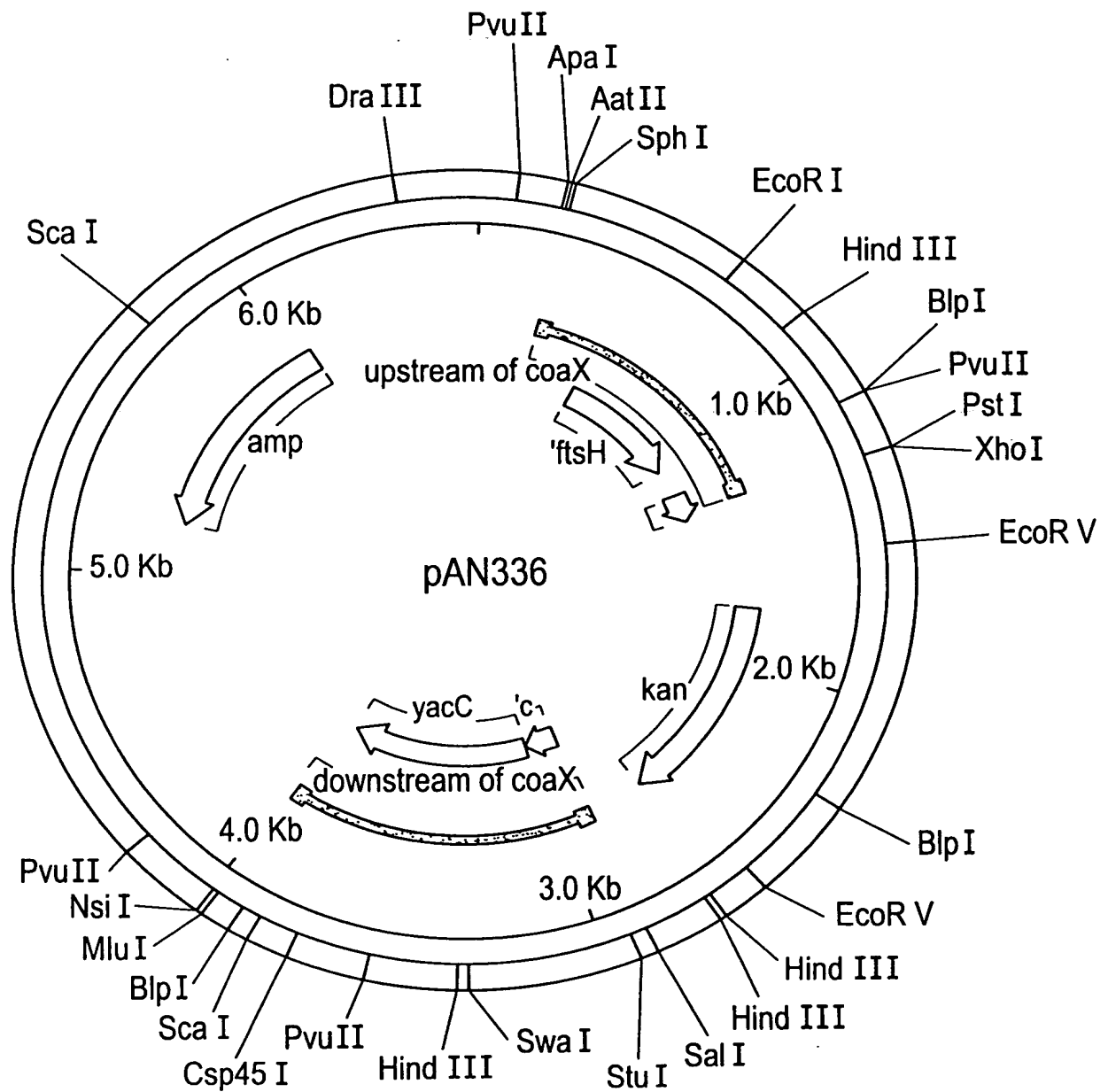
B. subtilis|Coax|SEQIDNO\_9  
 WIT|RCA03301|C. acetobutylicum  
 pir|T36391|S. coelicolor  
 sp|O06282|M. tuberculosis  
 WIT|RR02473|R. capsulatus  
 dbj|BAA21476.1|D. vulgaris  
 sp|Q9RX54|D. radiodurans  
 gb|AAD35964.1|T. maritima  
 sp|O83446|T. pallidum  
 sp|O51477|B. burgdorferi  
 sp|O67753|A. aeolicus  
 sp|P74045|Synechocystis  
 sp|O25533|H. pylori  
 sp|Q45338|B. pertussis

B. subtilis|Coax|SEQIDNO\_9  
 WIT|RCA03301|C. acetobutylicum  
 pir|T36391|S. coelicolor  
 sp|O06282|M. tuberculosis  
 WIT|RR02473|R. capsulatus  
 dbj|BAA21476.1|D. vulgaris  
 sp|Q9RX54|D. radiodurans  
 gb|AAD35964.1|T. maritima  
 sp|O83446|T. pallidum  
 sp|O51477|B. burgdorferi  
 sp|O67753|A. aeolicus  
 sp|P74045|Synechocystis  
 sp|O25533|H. pylori  
 sp|Q45338|B. pertussis

YERNRVGSV-----  
 -----  
 YERNVSRM-----  
 FERNLEVQGRRLKTAR-----  
 FDYNKGLGA-----  
 -----  
 WASRSEVR-----  
 CFGD-----  
 ARLVPTSLPPATVSGSSGN  
 GNSIDFKFVN-----  
 LLYLHRI-----  
 HGDRPIC-----  
 LKKA GILECK-----  
 AAQGAPTA-----

-----VIATGG-----LAPLIANES-----DCIDIVDPFLTKGLELI  
 RTSLVLATGG-----LAKLIN-----  
 DDVTVIATGG-----LAPMVLGES-----SVIDEHEPWLTLMGLRLV  
 HDVAIVATGH-----TAPLILPEL-----HTVDHYDQHLTLQGLRLV  
 --MKVIATGG-----LASLFDLGF-----DLFDKVEDDLTMEGLRLI  
 -----  
 --AVAVATGG-----FSRTVQGIC-----QEIDYYDETTLRGLVEL  
 -----VVLTTGG-----QSKIVK-DM-----IKHEIFDEDLTIKGVYHF  
 --CAAVITGG-----LSRLFS-SE-----VDFPPIDAQLTSLGLAHI  
 --FNLIITGG-----NADLILSLI-----EIEFIFNIHLTVEGVRIL  
 --FKVVITGG-----EGKYFS-----KFGIYDPLLVRGMRNL  
 --AMVITGG-----DGKILHGFLKEHSPNLSVAWDDNLIIFLGMAAI  
 -----IYLCGG-----DAKYLSAFL-----PHSVCKERLVFDGMEIA  
 --EIYVAGGWPEVRQEAERLLAVTGAAGATPQPTYLDSPVLDGLAAL

FIG. 7



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FIG. 8

## Construction of pOTP72

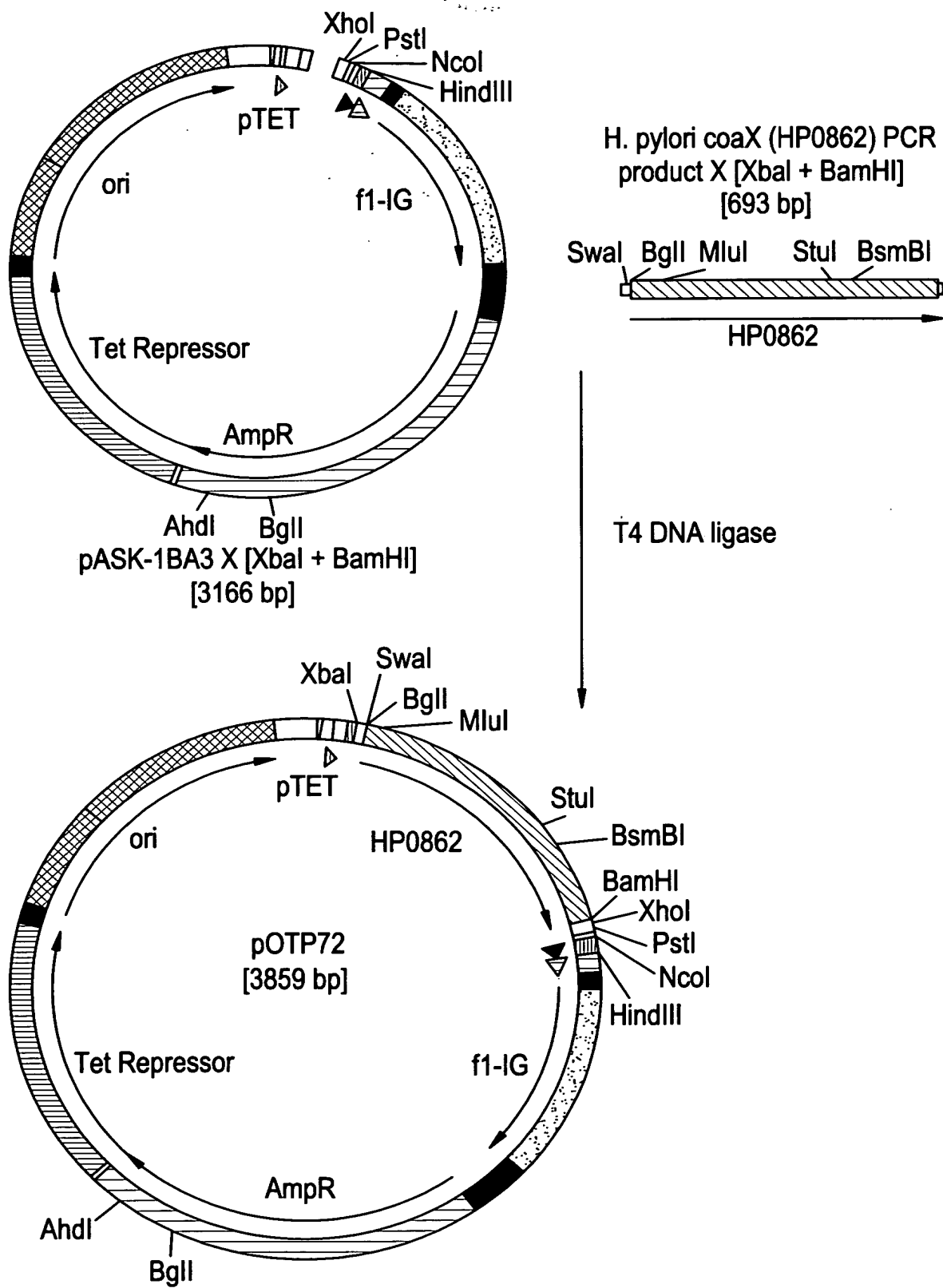
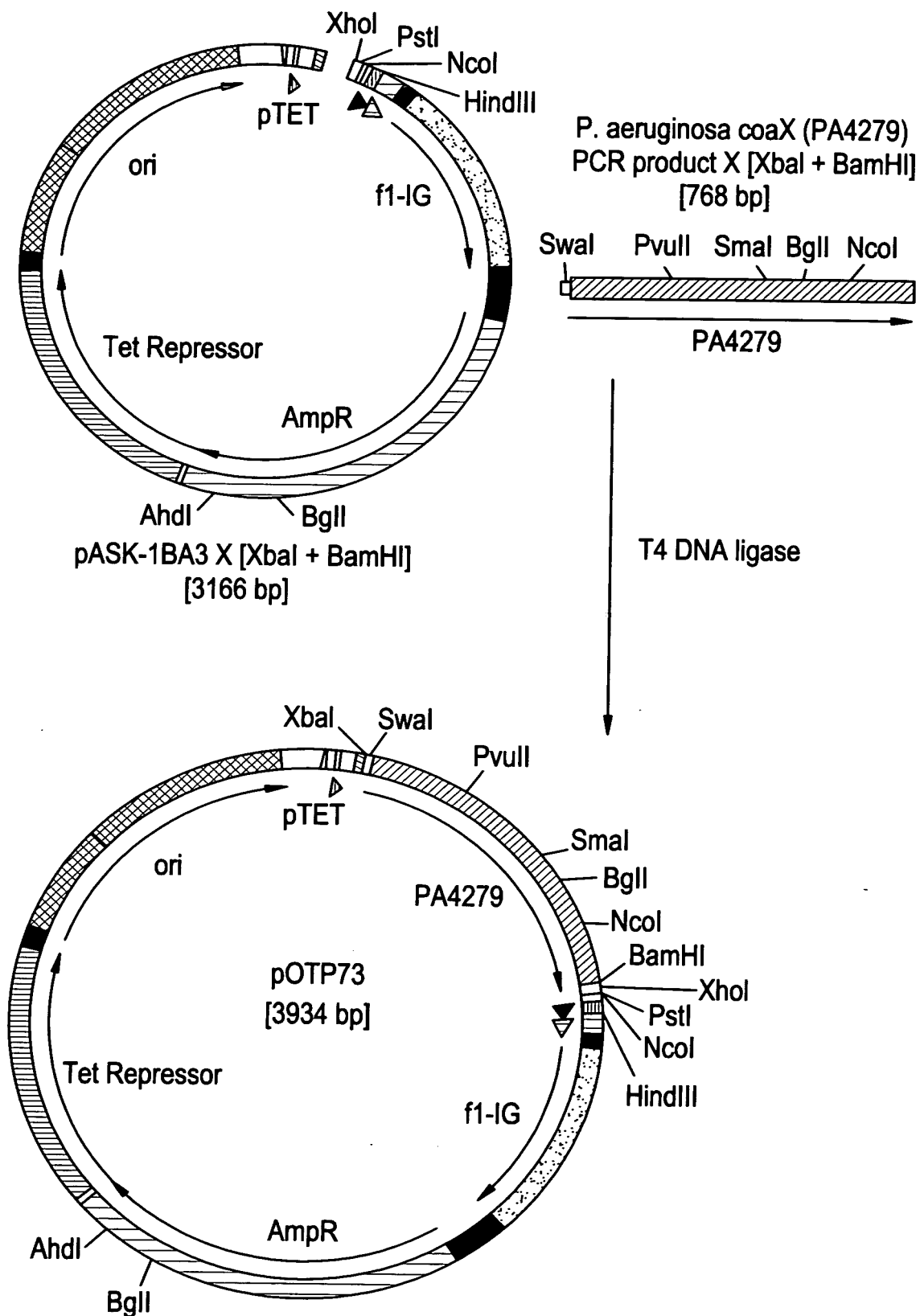


FIG. 9

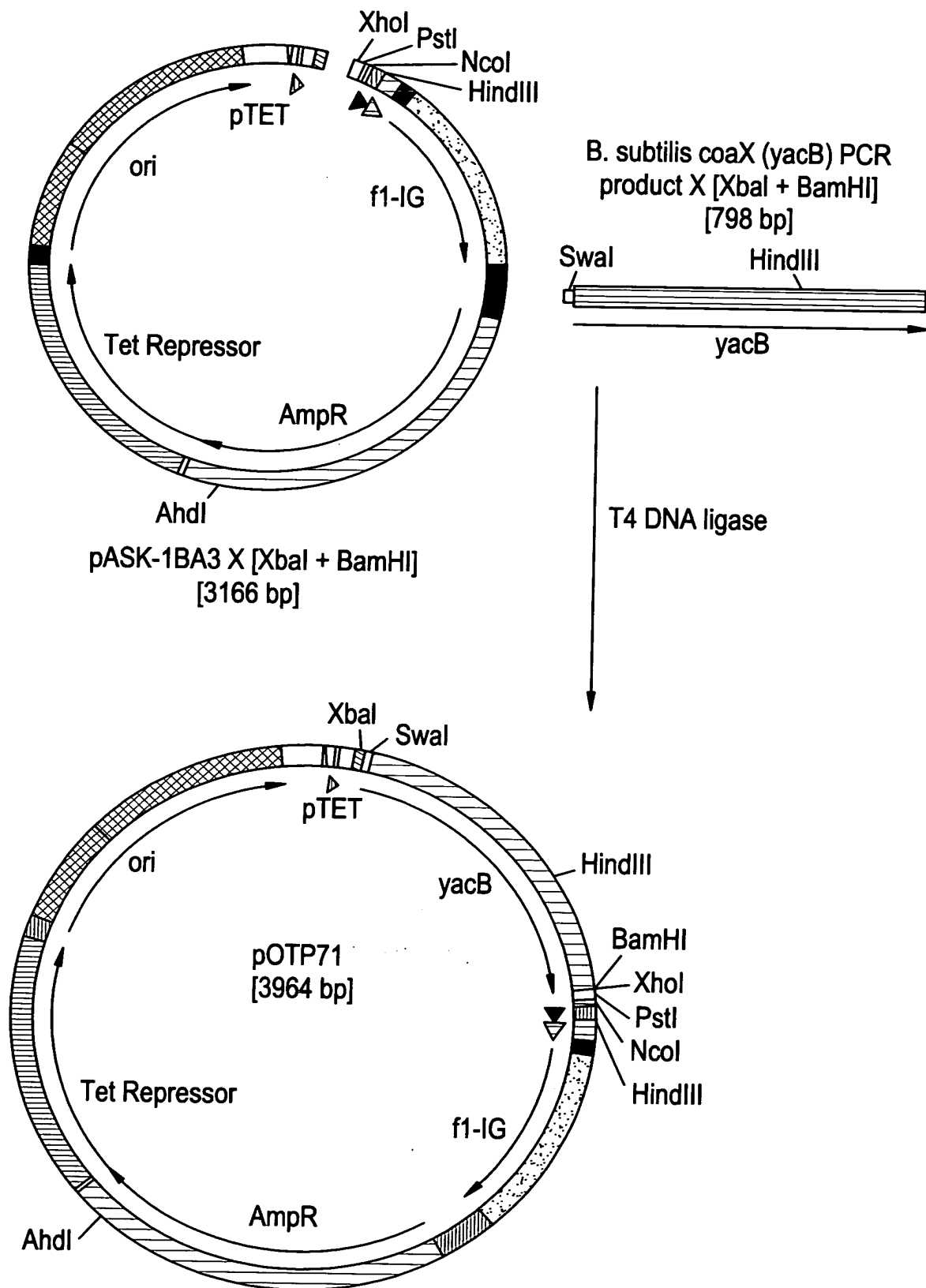
## Construction of pOTP73



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FIG. 10

## Construction of pOTP71



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